Narrative Report: School District Analysis

This report presents a comprehensive analysis of school district performance based on various metrics such as test scores, school size, school spending, and school type. Using data on student performance, school budgets, and school characteristics, the goal of this analysis was to uncover trends and insights into the factors that contribute to academic success.

Summary of the Analysis

The analysis began with a **District Summary**, where key performance indicators such as total schools, total students, total budget, average test scores, and passing percentages for math, reading, and both subjects were calculated. These metrics provided an overall snapshot of the district's academic performance and financial allocation.

Next, we conducted a **School Summary**, where performance was broken down at the individual school level. This included metrics such as total students per school, per-student spending, average math and reading scores, and the percentage of students passing each subject. From these metrics, we were able to identify the highest- and lowest-performing schools based on overall passing rates.

In addition to individual school performance, we also analyzed **Math and Reading Scores by Grade**, where the performance of students in different grades was examined to uncover potential trends across grade levels.

Further analysis was conducted on **Scores by School Spending** and **Scores by School Size**, where the relationship between school size, spending per student, and academic performance was explored. These sections provided insights into whether larger schools or higher per-student spending correlated with better outcomes.

Lastly, performance was also broken down by **School Type** (Charter vs. District schools), revealing differences in academic performance based on the type of school.

Conclusions and Comparisons

1. Impact of School Size on Performance

From the **School Size vs. Performance** table, we observed a clear trend: smaller schools tend to outperform larger schools in all metrics, including average math and reading scores, as well as passing rates. Small schools (<1000 students) had an impressive **90.54% overall passing rate**, while large schools (2000-5000 students) had a much lower **58.29% overall passing rate**. This suggests that smaller schools might provide a more conducive environment for student success, possibly due to factors such as smaller class sizes or more individualized attention.

Key Visualization

School Size vs. Performance

School Size	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Small (<1000)	83.87	83.93	93.55	96.70	90.54
Medium (1000-2000)	81.62	83.15	86.72	93.25	81.56
Large (2000-5000)	77.74	80.95	69.96	82.78	58.29

2. Spending per Student and Academic Performance

In the analysis of **Scores by School Spending**, schools were binned by per-student spending, and we noticed that higher spending did not always correlate with better academic outcomes. For example, schools in the **$645-$680** spending range had the lowest **overall passing rate** of **53.53%**, despite spending more per student than schools in the **<$585** range, which had an **overall passing rate** of **90.39%**. This suggests that simply increasing spending per student does not guarantee better academic performance. Other factors, such as how the money is spent, school management, and student engagement, might play a larger role.

Key Visualization

Spending Ranges (Per Student)	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
<$585	83.46	83.88	93.47	96.61	90.39
$585-630	81.90	83.16	87.13	93.27	82.58
$630-645	78.52	81.42	73.43	85.20	64.46
$645-680	77.04	81.02	66.16	81.36	53.53

Final Thoughts

This analysis highlights key trends that should inform district policy. Notably, smaller schools seem to perform better across the board, and simply increasing per-student spending does not guarantee academic success. These insights suggest that focusing on improving school environments and management, particularly in larger schools, could yield better results than focusing solely on increasing budgets. Additionally, schools should evaluate how they allocate their resources to ensure that spending directly impacts student achievement.